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\* \* \* \* \* STN Columbus \* \* \* \* \*

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

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FILE CONTAINS CURRENT INFORMATION.  
LAST RELOADED: Dec 30, 2005 (20051230/UP).

=> FIL HOME		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.06	0.27

FILE 'HOME' ENTERED AT 17:35:26 ON 04 JAN 2006

=> file caplus uspatfull japio eptfull medline biosis embase scisearch		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.48

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FILE 'MEDLINE' ENTERED AT 17:35:45 ON 04 JAN 2006

FILE 'BIOSIS' ENTERED AT 17:35:45 ON 04 JAN 2006  
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FILE 'SCISEARCH' ENTERED AT 17:35:45 ON 04 JAN 2006  
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=> s crosslink? and polymer? and (in vivo)  
5 FILES SEARCHED...

L1 25291 CROSSLINK? AND POLYMER? AND (IN VIVO)

=> s l1 and (free radical#)

L2 3511 L1 AND (FREE RADICAL#)

=> s l2 and (electromagnet? or (x ray#) or (ultrasound) or ifrared or (far infrared) or ultraviolet or (long wavelength ultraviolet) or (visible light))

L3 1949 L2 AND (ELECTROMAGNET? OR (X RAY#) OR (ULTRASOUND) OR IFRARED  
OR (FAR INFRARED) OR ULTRAVIOLET OR (LONG WAVELENGTH ULTRAVIOLET  
OR (VISIBLE LIGHT))

=> s l4 and photoinitiat?

L4 NOT FOUND

The L-number entered could not be found. To see the definition  
of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> s l3 and photoinitiat?

L4 351 L3 AND PHOTOINITIAT?

=> s l4 and (erythrosin or phloxime or (rose bengal) or thonine or camphorquinone  
or (ethyl eosin) or eosin or (methylene blue) or riboflavin or (2  
phenylacetophenone) or acetophenone?)

<-----User Break----->

SEARCH ENDED BY USER

SEARCH ENDED BY USER

=> s l4 and (erythrosin or phloxime or (rose bengal) or thonine or camphorquinone  
or (ethyl eosin) or eosin or (methylene blue) or riboflavin or (2  
phenylacetophenone) or acetophenone?)

L5 266 L4 AND (ERYTHROSIN OR PHLOXIME OR (ROSE BENGAL) OR THONINE OR  
CAMPBORQUINONE OR (ETHYL EOSIN) OR EOSIN OR (METHYLENE BLUE) OR  
RIBOFLAVIN OR (2 PHENYLACETOPHENONE) OR ACETOPHENONE?)

=> s l5 and cocatalyst

L6 75 L5 AND COCATALYST

=> s l6 and triethyanolamine

L7 1 L6 AND TRIETHYANOLAMINE

=> s l6 and triethanolamine

L8 71 L6 AND TRIETHANOLAMINE

=> s l8 and inject?

L9 68 L8 AND INJECT?

=> s l9 and (diethanolamine or benzylamine or triethylamine or dibenzylamine or  
benzylethanolamine or (isopropyl benzylamine))

L10 51 L9 AND (DIETHANOLAMINE OR BENZYLAMINE OR TRIETHYLAMINE OR DIBEN  
ZYLAMINE OR BENZYLETHANOLAMINE OR (ISOPROPYL BENZYLAMINE))

=> s l10 and cell?

L11 51 L10 AND CELL?

=> s l11 and tissue

L12 47 L11 AND TISSUE

=> s l12 qand (tissue regenerat?)

MISSING OPERATOR L12 QAND

The search profile that was entered contains terms or  
nested terms that are not separated by a logical operator.

=> s l12 and (tissue regenerat?)

L13 3 L12 AND (TISSUE REGENERAT?)

=> d 113 1-3 ibib abs

L13 ANSWER 1 OF 3 USPATFULL on STN

ACCESSION NUMBER: 2005:81131 USPATFULL  
TITLE: Multi-layered **polymerizing** hydrogels for  
**tissue regeneration**  
INVENTOR(S): Williams, Christopher G., Baltimore, MD, UNITED STATES  
Sharma, Blanka, Baltimore, MD, UNITED STATES  
Elisseeff, Jennifer H., Baltimore, MD, UNITED STATES  
PATENT ASSIGNEE(S): Elisseeff, Jennifer H., Baltimore, MD (U.S.  
corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005069572	A1	20050331
APPLICATION INFO.:	US 2003-681753	A1	20031009 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-416882P	20021009 (60)
	US 2002-416881P	20021009 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	GRIFFIN & SZIPL, PC, SUITE PH-1, 2300 NINTH STREET, SOUTH, ARLINGTON, VA, 22204	
NUMBER OF CLAIMS:	52	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	8 Drawing Page(s)	
LINE COUNT:	2126	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A multi-layered **tissue** construct includes: a first layer comprising a first hydrogel; and a second layer comprising a second hydrogel, wherein the first layer is connected to the second layer at a first transition zone and wherein at least one of the first layer and the second layer further comprises a component selected from the group consisting of **cells** and a bioactive substance. Another multi-layered **tissue** construct includes: a first layer comprising a first hydrogel; a second layer comprising **cells** of a first type, wherein the second layer is disposed on the first layer; and a third layer comprising a second hydrogel and optionally **cells** of the first type encapsulated in the second hydrogel, wherein the third layer is disposed on the second layer. Methods for producing these multi-layered **tissue** constructs are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 2 OF 3 USPATFULL on STN

ACCESSION NUMBER: 2004:293217 USPATFULL  
TITLE: In-situ formed intervertebral fusion device and method  
INVENTOR(S): DiMauro, Thomas M., Southboro, MA, UNITED STATES  
Slivka, Michael Andrew, Taunton, MA, UNITED STATES  
Malone, John Daniel, Cumberland, RI, UNITED STATES  
Moore, Bradley Thomas, Barrington, RI, UNITED STATES  
Serhan, Hassan, South Easton, MA, UNITED STATES  
Kadiyala, Sudhakar, South Easton, MA, UNITED STATES  
Bartish, Charles M., JR., Providence, RI, UNITED STATES  
Woodrow, Hal Brent, Princeton, NJ, UNITED STATES  
Rohr, William L., Palm Beach Gardens, FL, UNITED STATES  
Kelly, James Edward, North Easton, MA, UNITED STATES  
Cooper, Kevin, Flemington, NJ, UNITED STATES

PATENT ASSIGNEE(S): Aquino, Lauren, Boston, MA, UNITED STATES  
DePuy Spine, Inc., Raynham, MA (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004230309	A1	20041118
APPLICATION INFO.:	US 2004-778684	A1	20040213 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2003-448221P	20030214 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133	
NUMBER OF CLAIMS:	104	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	28 Drawing Page(s)	
LINE COUNT:	5024	

AB An orthopedic device for implanting between adjacent vertebrae comprising: an arcuate balloon and a hardenable material within said balloon.

In some embodiments, the balloon has a footprint that substantially corresponds to a perimeter of a vertebral endplate. An inflatable device is inserted through a cannula into an intervertebral space and oriented so that, upon expansion, a natural angle between vertebrae will be at least partially restored. At least one component selected from the group consisting of a load-bearing component and an osteobiologic component is directed into the inflatable device through a fluid communication means.

L13 ANSWER 3 OF 3 USPATFULL on STN

ACCESSION NUMBER: 2000:77431 USPATFULL  
TITLE: Biodegradable mixtures of polyphosphazene and other **polymers**

INVENTOR(S): Laurencin, Cato, Elkins Park, PA, United States  
Allcock, Harry, State College, PA, United States  
Ibim, Sobrasua, Forrest Park, GA, United States  
Ambrosio, Archel, Philadelphia, PA, United States  
Kwon, Michael, Narberth, PA, United States

PATENT ASSIGNEE(S): The Penn State Research Foundation, University Park, PA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6077916		20000620
APPLICATION INFO.:	US 1998-90374		19980604 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-48523P	19970604 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Truong, Duc	
LEGAL REPRESENTATIVE:	Arnall Golden & Gregory, LLP	
NUMBER OF CLAIMS:	17	
EXEMPLARY CLAIM:	1	
LINE COUNT:	739	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Biodegradable **polymeric** compositions are provided, wherein biodegradable polyphosphazenes are combined with at least one other **polymer**, either in the form of a blend, a semi-interpenetrating

network (semi-IPN), or an interpenetrating network IPN. The side groups and composition of the polyphosphazenes are used to determine the properties of the compositions, for example, the rate and extent of degradation, and mechanical properties. These are useful in biomedical applications, including controlled drug delivery and **tissue regeneration**, and environmental applications. In the most preferred embodiment, as demonstrated by the examples, the polyphosphazenes contain hydrophobic side groups, such as p-methylphenoxy and other aromatic groups, and groups which impart hydrolytic instability, such as amino acid alkyl esters, and degrade by surface erosion. A preferred example is ethyl glycinato-substituted polyphosphazene (PPHOS) with p-methylphenoxy as co-substituent. These are blended with other **polymers**, such as PLGA, which have desirable mechanical properties but which degrade by bulk erosion, so that the blend degrades by surface erosion. For the biomedical applications, FDA approved **polymers**, such as **polymers** of lactic and glycolic acids and their copolymers, are preferred. Methods for making these compositions also are provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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NEWS 15 DEC 14 2006 MeSH terms loaded for MEDLINE file segment of TOXCENTER  
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IPC reform  
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FILE CONTAINS CURRENT INFORMATION.  
LAST RELOADED: Dec 30, 2005 (20051230/UP).

=> FIL HOME		
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	ENTRY	SESSION
FULL ESTIMATED COST	0.06	0.27

FILE 'HOME' ENTERED AT 17:35:26 ON 04 JAN 2006

=> file caplus uspatfull japio eptfull medline biosis embase scisearch		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.48

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=> s crosslink? and polymer? and (in vivo)  
5 FILES SEARCHED...

L1 25291 CROSSLINK? AND POLYMER? AND (IN VIVO)

=> s l1 and (free radical#)

L2 3511 L1 AND (FREE RADICAL#)

=> s l2 and (electromagnet? or (x ray#) or (ultrasound) or ifrared or (far infrared) or ultraviolet or (long wavelength ultraviolet) or (visible light))

L3 1949 L2 AND (ELECTROMAGNET? OR (X RAY#) OR (ULTRASOUND) OR IFRARED OR (FAR INFRARED) OR ULTRAVIOLET OR (LONG WAVELENGTH ULTRAVIOLET ) OR (VISIBLE LIGHT))

=> s l4 and photoinitiat?

L4 NOT FOUND

The L-number entered could not be found. To see the definition of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> s l3 and photoinitiat?

L4 351 L3 AND PHOTOINITIAT?

=> s l4 and (erythrosin or phloxime or (rose bengal) or thonine or camphorquinone or (ethyl eosin) or eosin or (methylene blue) or riboflavin or (2 phenylacetophenone) or acetophenone?)

<-----User Break----->

SEARCH ENDED BY USER

SEARCH ENDED BY USER

=> s l4 and (erythrosin or phloxime or (rose bengal) or thonine or camphorquinone or (ethyl eosin) or eosin or (methylene blue) or riboflavin or (2 phenylacetophenone) or acetophenone?)

L5 266 L4 AND (ERYTHROSIN OR PHLOXIME OR (ROSE BENGAL) OR THONINE OR CAMPHORQUINONE OR (ETHYL EOSIN) OR EOSIN OR (METHYLENE BLUE) OR RIBOFLAVIN OR (2 PHENYLACETOPHENONE) OR ACETOPHENONE?)

=> s l5 and cocatalyst

L6 75 L5 AND COCATALYST

=> s l6 and triethyanolamine

L7 1 L6 AND TRIETHYANOLAMINE

=> s l6 and triethanolamine

L8 71 L6 AND TRIETHANOLAMINE

=> s l8 and inject?

L9 68 L8 AND INJECT?

=> s L9 and (diethanolamine or benzylamine or triethylamine or dibenzylamine or benzylethanolamine or (isopropyl benzylamine))

L10 51 L9 AND (DIETHANOLAMINE OR BENZYLAMINE OR TRIETHYLAMINE OR DIBENZYLAMINE OR BENZYLETHANOLAMINE OR (ISOPROPYL BENZYLAMINE))

=> s l10 and cell?

L11 51 L10 AND CELL?

=> s l11 and tissue

L12 47 L11 AND TISSUE

=> s l12 qand (tissue regenerat?)

MISSING OPERATOR L12 QAND

The search profile that was entered contains terms or nested terms that are not separated by a logical operator.

=> s l12 and (tissue regenerat?)

L13 3 L12 AND (TISSUE REGENERAT?)

=> d l13 1-3 ibib abs

L13 ANSWER 1 OF 3 USPATFULL on STN

ACCESSION NUMBER: 2005:81131 USPATFULL

TITLE: Multi-layered **polymerizing** hydrogels for **tissue regeneration**

INVENTOR(S): Williams, Christopher G., Baltimore, MD, UNITED STATES  
Sharma, Blanka, Baltimore, MD, UNITED STATES  
Elisseeff, Jennifer H., Baltimore, MD, UNITED STATES  
PATENT ASSIGNEE(S): Elisseeff, Jennifer H., Baltimore, MD (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005069572	A1	20050331
APPLICATION INFO.:	US 2003-681753	A1	20031009 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-416882P	20021009 (60)
	US 2002-416881P	20021009 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: GRIFFIN & SZIPL, PC, SUITE PH-1, 2300 NINTH STREET, SOUTH, ARLINGTON, VA, 22204

NUMBER OF CLAIMS: 52

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 8 Drawing Page(s)

LINE COUNT: 2126

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A multi-layered **tissue** construct includes: a first layer comprising a first hydrogel; and a second layer comprising a second hydrogel, wherein the first layer is connected to the second layer at a first transition zone and wherein at least one of the first layer and the second layer further comprises a component selected from the group consisting of **cells** and a bioactive substance. Another multi-layered **tissue** construct includes: a first layer comprising a first hydrogel; a second layer comprising **cells** of a first type, wherein the second layer is disposed on the first layer; and a third layer comprising a second hydrogel and optionally **cells** of the first type encapsulated in the second hydrogel, wherein the third layer is disposed on the second layer. Methods for producing these multi-layered **tissue** constructs are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 2 OF 3 USPATFULL on STN

ACCESSION NUMBER: 2004:293217 USPATFULL

TITLE: In-situ formed intervertebral fusion device and method

INVENTOR(S): DiMauro, Thomas M., Southboro, MA, UNITED STATES  
Slivka, Michael Andrew, Taunton, MA, UNITED STATES  
Malone, John Daniel, Cumberland, RI, UNITED STATES  
Moore, Bradley Thomas, Barrington, RI, UNITED STATES  
Serhan, Hassan, South Easton, MA, UNITED STATES  
Kadiyala, Sudhakar, South Easton, MA, UNITED STATES  
Bartish, Charles M., JR., Providence, RI, UNITED STATES  
Woodrow, Hal Brent, Princeton, NJ, UNITED STATES  
Rohr, William L., Palm Beach Gardens, FL, UNITED STATES  
Kelly, James Edward, North Easton, MA, UNITED STATES  
Cooper, Kevin, Flemington, NJ, UNITED STATES

PATENT ASSIGNEE(S): Aquino, Lauren, Boston, MA, UNITED STATES  
DePuy Spine, Inc., Raynham, MA (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004230309	A1	20041118
APPLICATION INFO.:	US 2004-778684	A1	20040213 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2003-448221P	20030214 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133	
NUMBER OF CLAIMS:	104	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	28 Drawing Page(s)	
LINE COUNT:	5024	

AB An orthopedic device for implanting between adjacent vertebrae comprising: an arcuate balloon and a hardenable material within said balloon.

In some embodiments, the balloon has a footprint that substantially corresponds to a perimeter of a vertebral endplate. An inflatable device is inserted through a cannula into an intervertebral space and oriented so that, upon expansion, a natural angle between vertebrae will be at least partially restored. At least one component selected from the group consisting of a load-bearing component and an osteobiologic component is directed into the inflatable device through a fluid communication means.

L13 ANSWER 3 OF 3 USPATFULL on STN

ACCESSION NUMBER: 2000:77431 USPATFULL  
TITLE: Biodegradable mixtures of polyphosphazene and other **polymers**  
INVENTOR(S): Laurencin, Cato, Elkins Park, PA, United States  
Allcock, Harry, State College, PA, United States  
Ibim, Sobrasua, Forrest Park, GA, United States  
Ambrosio, Archel, Philadelphia, PA, United States  
Kwon, Michael, Narberth, PA, United States  
PATENT ASSIGNEE(S): The Penn State Research Foundation, University Park, PA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6077916		20000620
APPLICATION INFO.:	US 1998-90374		19980604 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-48523P	19970604 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Truong, Duc	
LEGAL REPRESENTATIVE:	Arnall Golden & Gregory, LLP	
NUMBER OF CLAIMS:	17	
EXEMPLARY CLAIM:	1	
LINE COUNT:	739	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Biodegradable **polymeric** compositions are provided, wherein biodegradable polyphosphazenes are combined with at least one other **polymer**, either in the form of a blend, a semi-interpenetrating

network (semi-IPN), or an interpenetrating network IPN. The side groups and composition of the polyphosphazenes are used to determine the properties of the compositions, for example, the rate and extent of degradation, and mechanical properties. These are useful in biomedical applications, including controlled drug delivery and **tissue regeneration**, and environmental applications. In the most preferred embodiment, as demonstrated by the examples, the polyphosphazenes contain hydrophobic side groups, such as p-methylphenoxy and other aromatic groups, and groups which impart hydrolytic instability, such as amino acid alkyl esters, and degrade by surface erosion. A preferred example is ethyl glycinato-substituted polyphosphazene (PPHOS) with p-methylphenoxy as co-substituent. These are blended with other **polymers**, such as PLGA, which have desirable mechanical properties but which degrade by bulk erosion, so that the blend degrades by surface erosion. For the biomedical applications, FDA approved **polymers**, such as **polymers** of lactic and glycolic acids and their copolymers, are preferred. Methods for making these compositions also are provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.